

2020 Census: Redistricting Data Informational Webinar

August 5, 2021

Access the audio:

Toll-free number: 1-888-847-6588

Participant passcode: 7727651

[2020 Census Redistricting Data Press Kit](#)

Speakers

Host	Michael C. Cook, Sr. , chief, Public Information Office, U.S. Census Bureau
Presenters	James Whitehorne , chief, Census Redistricting and Voting Rights Data Office Matthew Spence , senior advisor for Special Population Statistics and Disclosure Avoidance, Population Division Rachel Marks , chief, Racial Statistics Branch, Population Division Eric Jensen , senior technical expert for Demographic Analysis, Population Division



2020 Census Redistricting Data

August 5, 2021

James Whitehorne

Chief, Census Redistricting and Voting Rights Data Office

www.census.gov/rdo

2020 Census Redistricting Data Program

Public Law 94-171

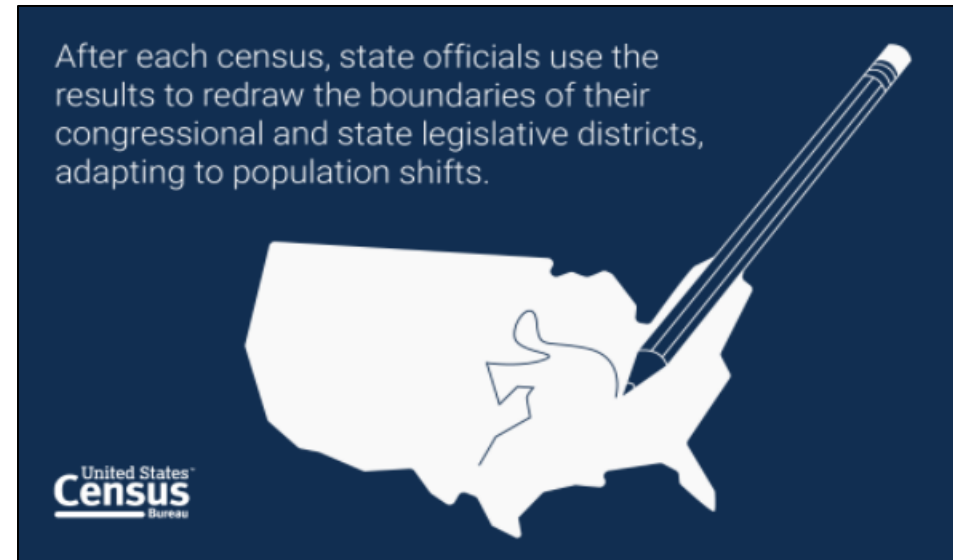
Program mission: Provide states an opportunity to identify the geographic areas for which specific tabulations of population are needed for legislative redistricting and to deliver high quality data for those areas in a timely manner.

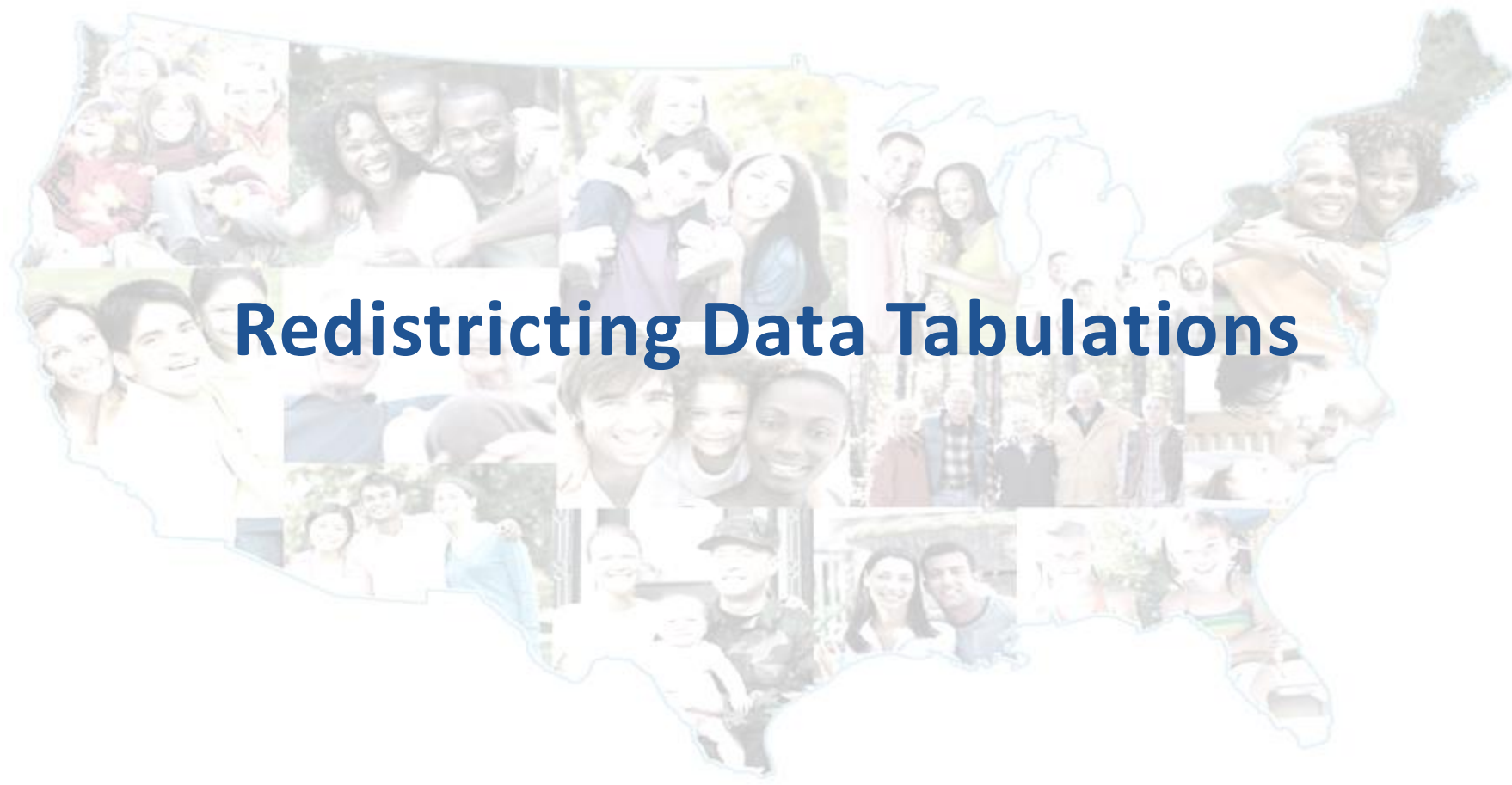
Identified “geographic areas desired”:

- Census tabulation blocks.
- Voting districts (e.g., precincts, wards, etc.).
- Congressional and state legislative districts.

Requirements:

- Conduct the program in a nonpartisan manner.
- Establish program criteria.
- Identify required tabulations.
- Deliver the tabulations to the governor and the officers or public bodies having initial responsibility for the legislative apportionment or districting of each state no later than 1 year from Census Day.





Redistricting Data Tabulations

Apportionment vs. Redistricting

		APPORTIONMENT	REDISTRICTING
Geography	Largest	State	State
	Smallest	State	Census block
Who is counted		Resident population + federally affiliated count overseas	Resident population only
What is reported		Total population only	Race, ethnicity, and select housing characteristics
Disclosure avoidance		None	Differentially private (TopDown Algorithm)
Current timeline		Released April 26, 2021	Legacy format – by August 16, 2021
			DVDs/flash drives and data.census.gov by September 30, 2021

Redistricting Data Program

Phase 3 – P.L. 94-171 Redistricting Data Tabulation Product

2020 Census P.L. 94-171 Redistricting Data Tabulations

Table P1 – Race

Table P2 – Hispanic or Latino, and not Hispanic or Latino by Race

Table P3 – Race for the Population 18 Years and Over

Table P4 – Hispanic or Latino, and not Hispanic or Latino by Race for the Population 18 Years and Over

Table H1 – Occupancy Status (Housing)

New Table

Table P5 – Group Quarters Population by Group Quarters Type

- All tables produced at multiple geographies including census block.
- Group Quarter types: Correctional institutions for adults, juvenile facilities, nursing facilities/skilled nursing, other institutional, college/university student housing, military quarters, and other noninstitutional.
- Group quarters is total population only, no demographic breakdown.



Redistricting Geography

Redistricting Data Program

Phase 3 – P.L. 94-171 Redistricting Data Geographic Support Products

2020 Census P.L. 94-171 Redistricting Data Geographic Products

Product Type	Census Web Address
Shapefiles	https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html
Reference Maps	https://www.census.gov/geographies/reference-maps.html
Block Assignment Files	https://www.census.gov/geographies/reference-files.html
Name Lookup Tables	https://www.census.gov/geographies/reference-files/time-series/geo/name-lookup-tables.html
Block to Block Relationship Files	https://www.census.gov/geographies/reference-files/time-series/geo/relationship-files.html

- Shapefiles – Geographic information system geometry files.
- Reference Maps (PDF only) – County block; state legislative with voting district; census tract; school district.
- Block Assignment Files – Tables identifying the blocks used to build different geographic entities.
- Name Lookup Tables – Contain names and codes for geographic areas within a state.
- Block to Block Relationship Files – Crosswalk of 2010 blocks to 2020 blocks.

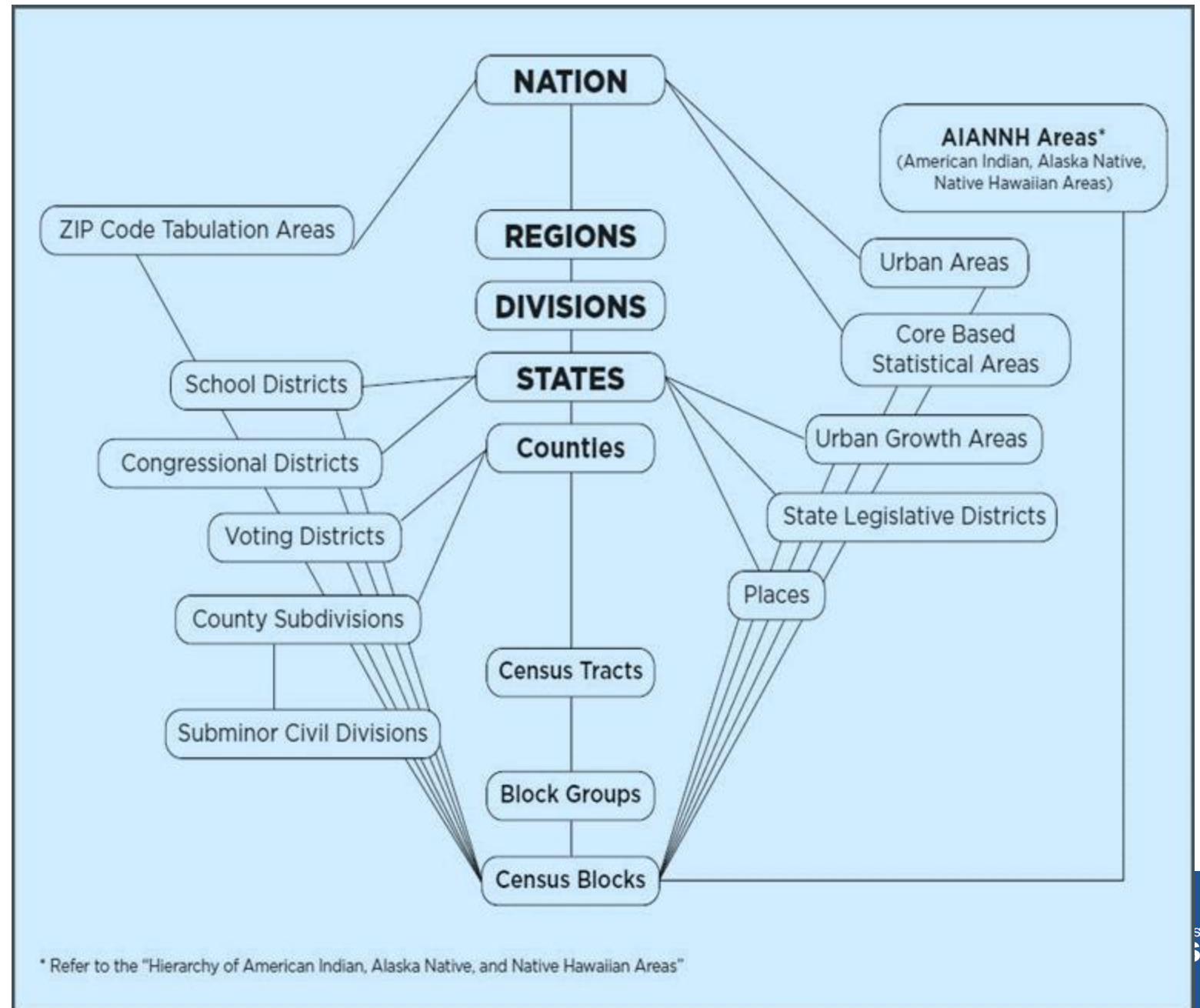
Standard Hierarchy of Census Geographic Entities

The hierarchy displays how legal, administrative, and statistical boundaries related to one another.

Geographic relationships are depicted with a line connection.

Census blocks are the smallest components of census geography.

Census blocks are aggregated up to form all other census geographies.

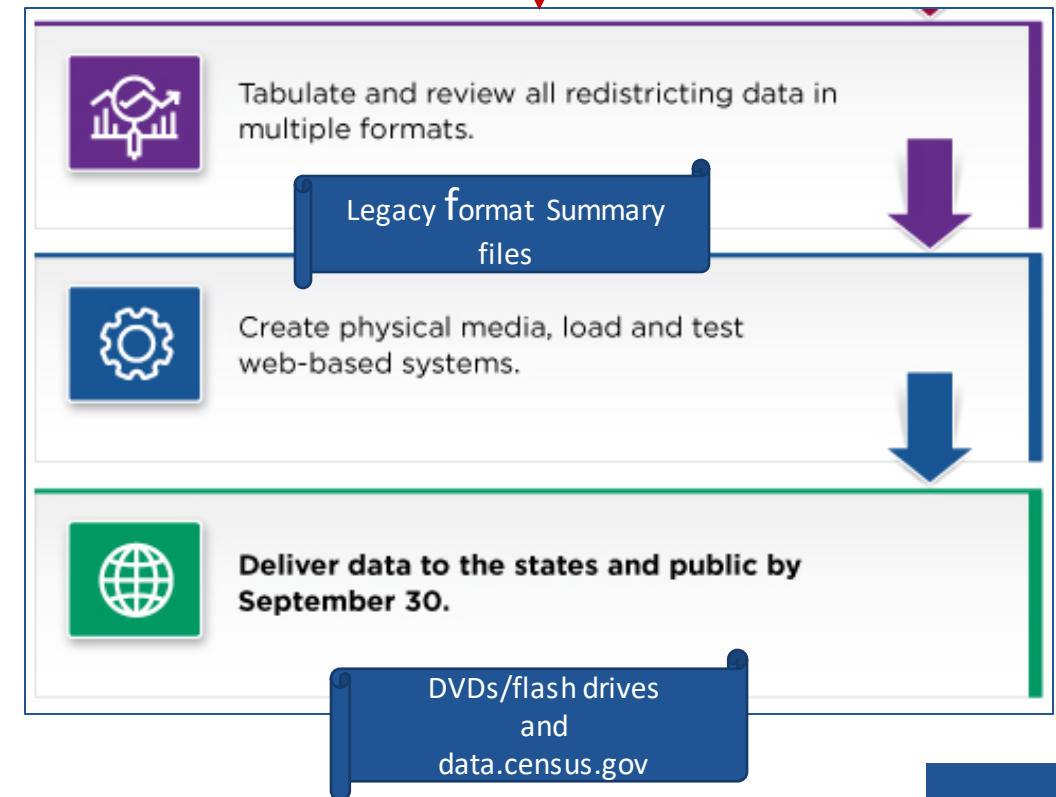
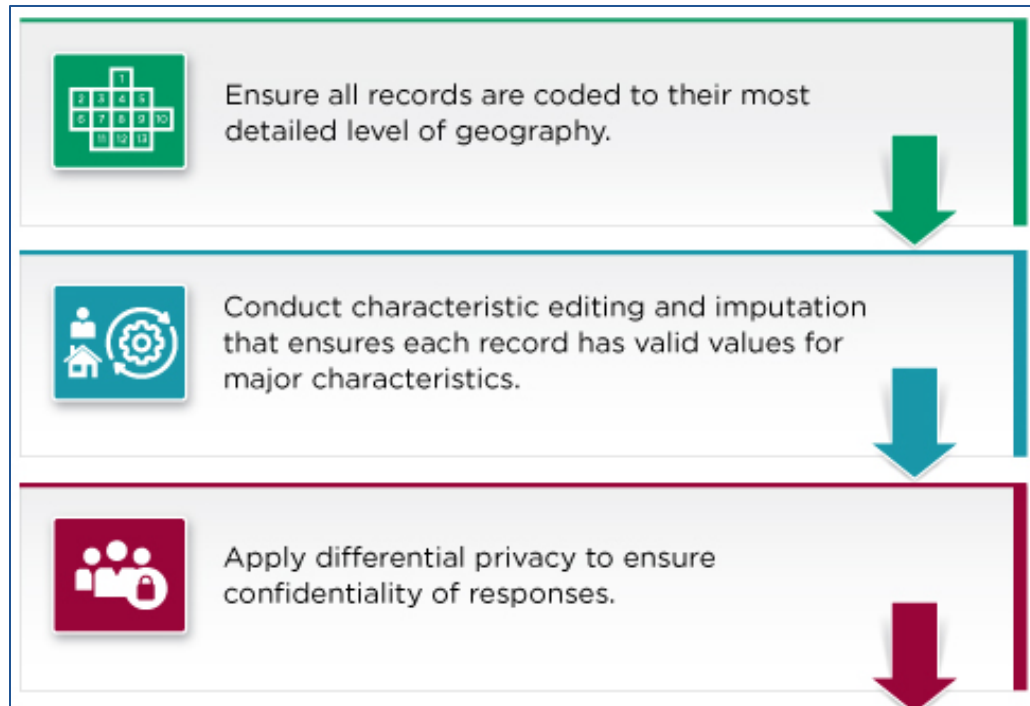




Redistricting Data Delivery

2020 Census Redistricting Data Program

Phase 3 – P.L. 94-171 Redistricting Data Processing



August Release

Legacy Format Summary Files

- Product was always part of the 2020 Census product plan.
- Format produced and provided to the states since at least the 2000 Census.
- Requires additional handling to properly extract data from this format.
- Fully reviewed and cleared for publication by August 16, 2021.
- Consultations with major software vendors, NCSL, nonprofits, and individual states to ensure they understand the August format.

Additional Material and Analysis From Legacy Files

- 2020 Census data map.
- Data visualizations.
- America Counts stories.
- Highlights in a news release.

Redistricting Data Program

QuickFacts Application

QuickFacts App

- 2020 Census Redistricting Data (Public Law 94-171) Summary File data will be published to QuickFacts with or soon after the Legacy Format Summary Files release.
- Data includes 2020 total population counts for eight geographies: nation, states, Puerto Rico, counties, municipios, places (5k+), zonas urbanas, and minor civil divisions (5k+).
- Data users can compare data for up to six geographic entities at a time.

Table

Population

Sparta township, Kent County, Michigan

Albert Lea city, Minnesota

Oklahoma City city, Oklahoma

Harris County, Texas

North Carolina

United States

	PEOPLE					
Population						
<i>i</i> Population estimates, July 1, 2019, (V2019)	9,703	17,656	655,057	4,713,325	10,488,084	328,239,523
<i>i</i> Population estimates base, April 1, 2010, (V2019)	9,111	18,203	580,462	4,093,176	9,535,751	308,758,105
<i>i</i> Population, percent change - April 1, 2010 (estimates base) to July 1, 2019, (V2019)	6.5%	-3.0%	12.9%	15.2%	10.0%	6.3%
<i>i</i> Population, Census, April 1, 2010	9,110	18,016	579,999	4,092,459	9,535,483	308,745,538
<i>i</i> Population, Census, April 1, 2020	X	X	X	X	10,439,388	331,449,281

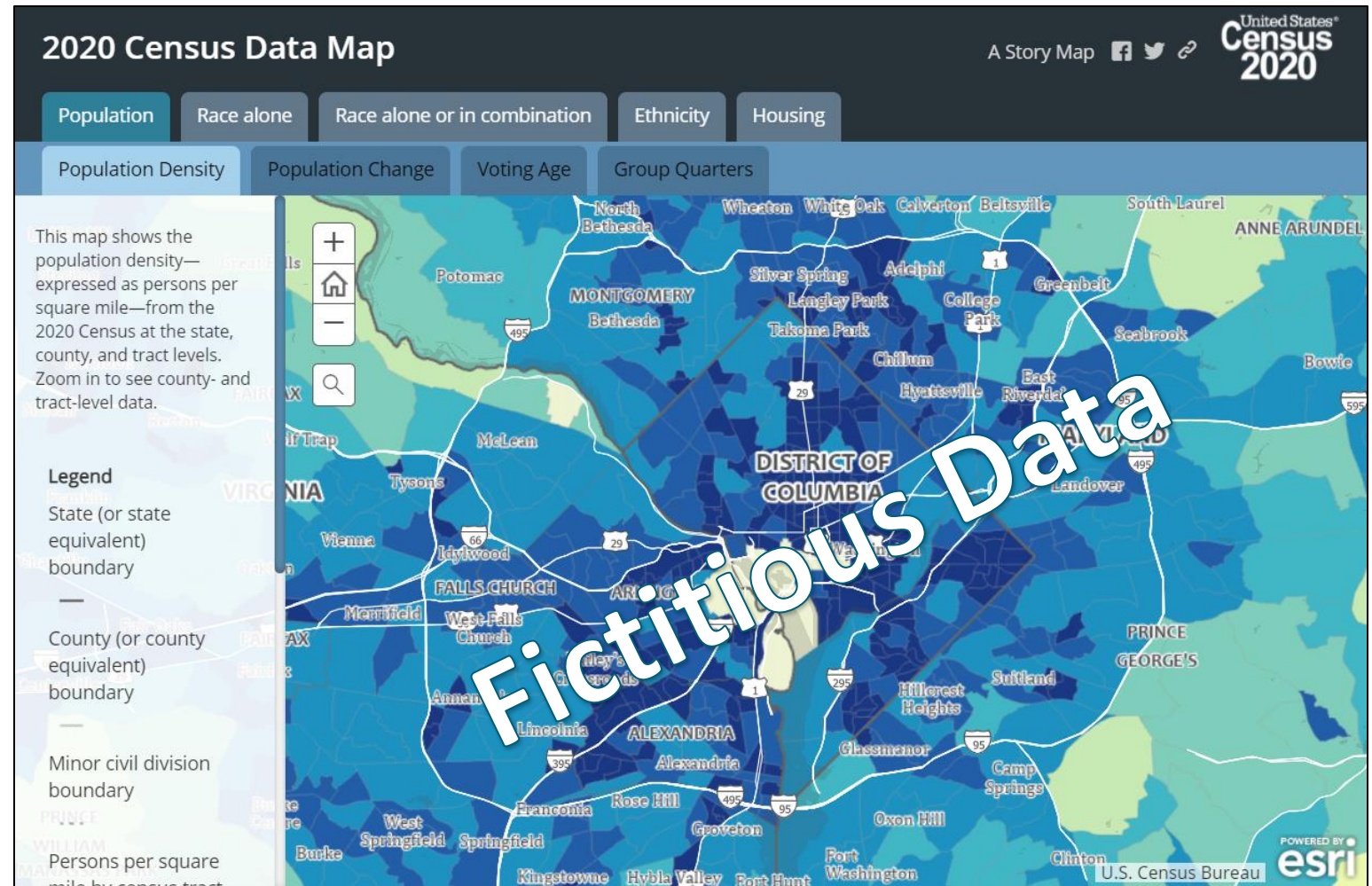
[About datasets used in this table](#)

Redistricting Data Program

2020 Census Demographic Data Map Application

2020 Census Demographic Data Map App

- The 2020 Mapping App will be published with or soon after the Legacy Format Summary Files release.
- App will feature population, race/ethnicity, and housing data for states, counties, and tracts.
- The geographies are scale dependent (disaggregate geographies populate as the user zooms in).



Public Law 94-171 Legacy Format Summary Files – August Release

Support

- 2020 Census Redistricting Data (Public Law 94-171) Summary File technical documentation.
- Prototype P.L. 94-171 Redistricting Data Summary File:
 - Content from the 2018 End-to-End Census Test in Providence County, RI.
 - In the format planned for the 2020 Census Legacy Format Summary Files.
 - Located on the Redistricting Data Program Management page: <https://www.census.gov/programs-surveys/decennial-census/about/rdo/program-management.html#P3>.
- Header file – Excel format:
 - Tabs for the header of each file which can be imported into other software or used within Excel.
 - Tabs with plain English definition for the headers.
- Microsoft Access database shell:
 - Tables shells for each file.
 - Example queries to demonstrate query logic and provide practice.
 - Illustrated step-by-step guide on how to use the Microsoft Access database shell.
 - Video: "Accessing 2020 Census Redistricting Data from Legacy Format Summary Files" available at <https://www.youtube.com/watch?v=dz9117G8BsU&t=1s>.
- SAS & R scripts for import of the Legacy Format Summary File.

Redistricting Data Program

Where to Get the Legacy Format Data

WWW.CENSUS.GOV/RDO

Voting Rights Data
(Section 203 and CVAP)

Decennial Census of Population and Housing

About the Decennial Census

Why a Census?

History of the Census

Census in the Constitution

Decennial and the American Community Survey (ACS)

Coverage Measurement

Local Update of Census Addresses Operation (LUCA)

New Construction Program

Participant Statistical Areas Program (PSAP)

Redistricting

Voting Rights

Related Sites

Information for Respondents

By Decade



Redistricting Data Program

REDISTRICTING & VOTING RIGHTS DATA OFFICE (RDO@CENSUS.GOV OR 301-763-4039)

MAY 05, 2017

Redistricting Data Program Congressional Districts

Guidance and access to information about congressional districts and congressional district products.

MAY 08, 2017

Redistricting Data Program State Legislative Districts

Guidance and access to information about state legislative districts and state legislative district products.

MAY 08, 2017

Decennial Census P.L. 94-171 Redistricting Data Summary Files

Guidance and documentation to assist in accessing P.L. 94-171 Redistricting Data

Redistricting Data Program Management

Guidance about and for participation in the Redistricting Data Program for the current and past Decennial Censuses.

Prototype Data

Redistricting data and support products for the Legacy Format Summary Files.

Redistricting Data Program

Where to Access All of the August Materials

2020 Census Results



2020 Census Apportionment Results

Congressional seats were apportioned among the 50 states based on the 2020 Census population counts. Apportionment results from 1790 to 2020 are also shown.



Historical Apportionment Data Map (Interactive)

This interactive tool enables users to view more than 10 decades of apportionment and population data.

States, as well as the public, will receive the data they need to begin redistricting by August 16. The Census Bureau will also deliver the final redistricting data toolkit to all states and the public by September 30. COVID-19-related delays and prioritizing the delivery of these apportionment results delayed our original plan.

More 2020 Census population results will be available later including statistics on age, sex, race and ethnicity, and details about the center of population. The results for the U.S. Island Areas will also be provided in a separate release at a later date.



<https://www.census.gov/programs-surveys/decennial-census/decade/2020/2020-census-results.html>

2020 Census Redistricting Files Press Kit

FEBRUARY 12, 2021

The U.S. Census Bureau provides the 50 states, the District of Columbia, and Puerto Rico with population counts to use in their redrawing of congressional and state legislative district boundaries—a process known as “redistricting.”

The Census Bureau will release these data on its public FTP site by August 16, 2021. The Census Bureau will release the same data in easier-to-use formats by September 30, 2021.

While the states are responsible for legislative redistricting, the Census Bureau provides the most accurate population counts possible for the geographic areas the states need.

<https://www.census.gov/newsroom/press-kits/2021/2020-census-redistricting.html>

September Release

The user-friendly tools and materials we intend to deliver in September are the DVDs and flash drive, and our data.census.gov Data Explorer platform.

- DVDs and flash drives – These are what we deliver to the official recipients with an integrated software browsing tool that allows intuitive browsing of the data. They also contain a custom extraction menu that allows for the extraction of large datasets from the device. Those extractions can then be imported easily into a Geographic Information System or database.
- Data Explorer web tool – The data.census.gov Data Explorer is our online data browsing tool for both the official recipients and the public. Users of the Data Explorer platform can access many different census datasets, including the redistricting data. It has custom filters that allow the user to filter on those geographic and characteristic data for which they are interested. For example, a state could filter the data and easily identify the number of voting-age residents by race or ethnicity in each and every block within a census tract, county, or even for the entire state. They can then view, map, and download these datasets once they have set the filters with their choices.

The 2020 Census Disclosure Avoidance System

August 5, 2021

Matthew Spence

Senior Advisor for Special Population Statistics and Disclosure Avoidance, Population Division

Our Commitment to Privacy and Confidentiality

Data stewardship is central to the Census Bureau's mission to produce high-quality statistics about the people and economy of the United States.

Our commitment to protect the privacy of our respondents and the confidentiality of their data is both a legal obligation and a core component of our institutional culture.



The Privacy Challenge

Every time you release any statistic calculated from a confidential data source you “leak” a small amount of private information.

If you release too many statistics, too accurately, you will eventually reveal the entire underlying confidential data source.



The Census Bureau's Privacy Protections Over Time

Throughout its history, the Census Bureau has been at the forefront of the design and implementation of statistical methods to safeguard respondent data.

Over the decades, as we have increased the number and detail of the data products we release, so too have we improved the statistical techniques we use to protect those data.



The Growing Privacy Threat

More Data and Faster Computers!

In today's digital age, there has been a proliferation of databases that could potentially be used to attempt to undermine the privacy protections of our statistical data products.

Similarly, today's computers can perform complex, large-scale privacy attacks with increasing ease.

These parallel trends represent new threats to our ability to safeguard respondents' data.



Disclosure Avoidance

Disclosure avoidance methods seek to make re-identification of individuals in published data more difficult, by:

- Reducing precision.
- Removing vulnerable records.
- Adding uncertainty.

Commonly-used methods include:

- Complementary suppression.
- Rounding.
- Top/bottom coding of extreme values.
- Sampling.
- Record swapping.
- Noise injection.

Impact on Data

All statistical techniques to protect privacy impose a tradeoff between the **degree of privacy protection** and the resulting **accuracy of the data**.

Swap rates, noise injection parameters, cell suppression thresholds, etc., determine this tradeoff.



Differential Privacy

Differential Privacy (DP) is a **framework** for defining and quantifying privacy protection.

When combined with noise injection, DP allows you to precisely control the amount of private information leakage in your published statistics.

- Infinitely tunable – parameter “dials” can be set anywhere from perfect privacy to perfect accuracy.
- Privacy guarantee is mathematically provable and future-proof.
- The precise calibration of statistical noise enables optimal data accuracy for any given level of privacy protection.*

*Absent post-processing requirements, which can introduce error independent of that needed to protect privacy.

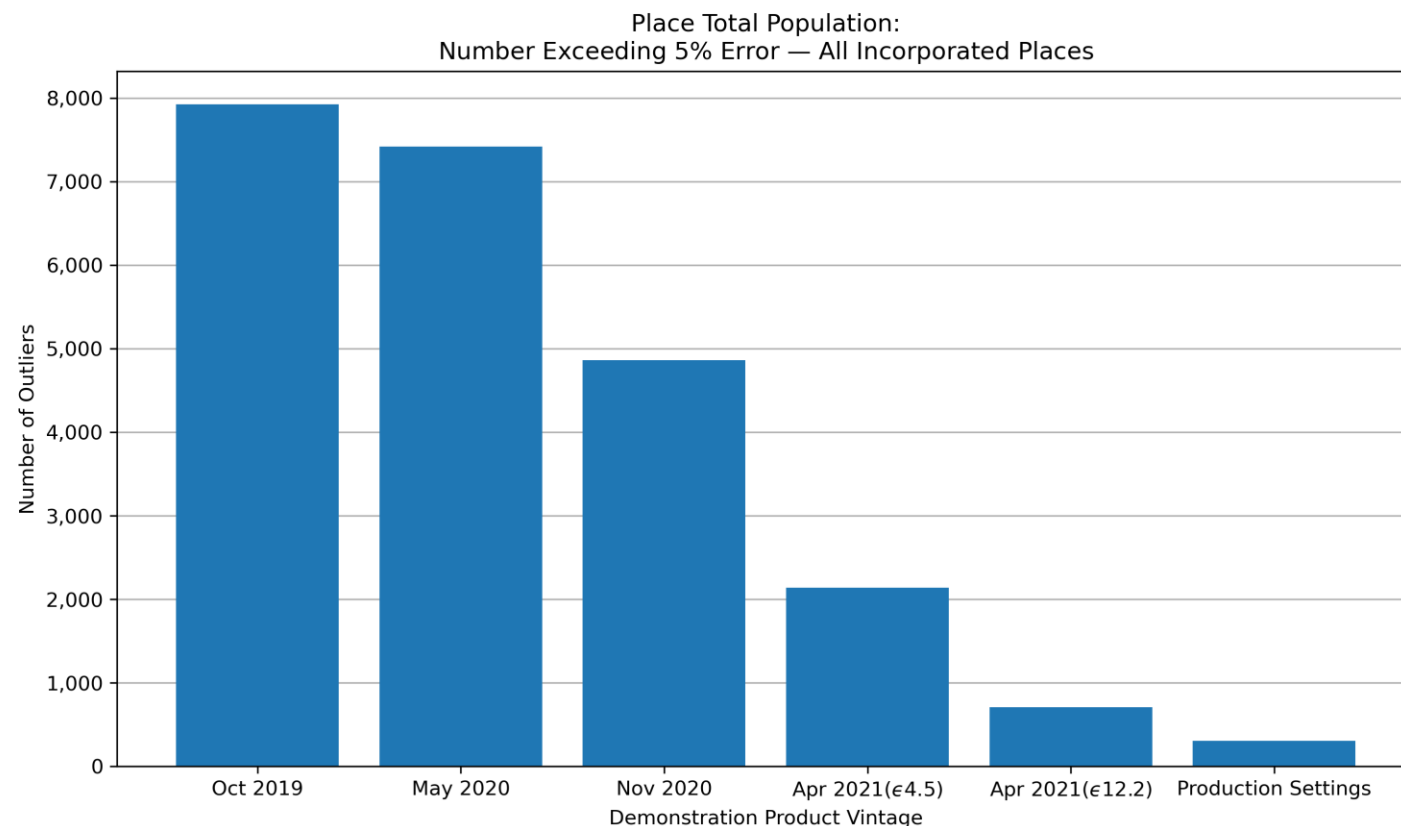


Working With Our Stakeholders

Over the past 2 years, the Census Bureau has released five sets of demonstration data products generated by running 2010 Census data through the 2020 Census Disclosure Avoidance System.

This allowed our data users to compare the differentially private results to the results published after the 2010 Census (which were protected using “swapping”).

The feedback and analyses we received have helped us to tune and adjust our algorithms to ensure that the resulting data will meet our data users’ needs.



Setting Parameters and Running Production

Production settings:

- On June 8, the Census Bureau's Data Stewardship Executive Policy (DSEP) committee set the disclosure avoidance parameters for the 2020 redistricting data product.
- Higher privacy-loss budget to increase accuracy for the **total population** and **race by ethnicity** queries for the block-group level and above.
- Metrics are currently available to help data users assess accuracy, bias, and counts of outliers. A new demonstration data file will be released along with the 2020 redistricting data.

Caution:

- Some small areas like census blocks may look especially noisy, inconsistent, or improbable.
- Strongly encourage data users to group blocks together.


See the Directors Blog on Redistricting Data: What to Expect and When

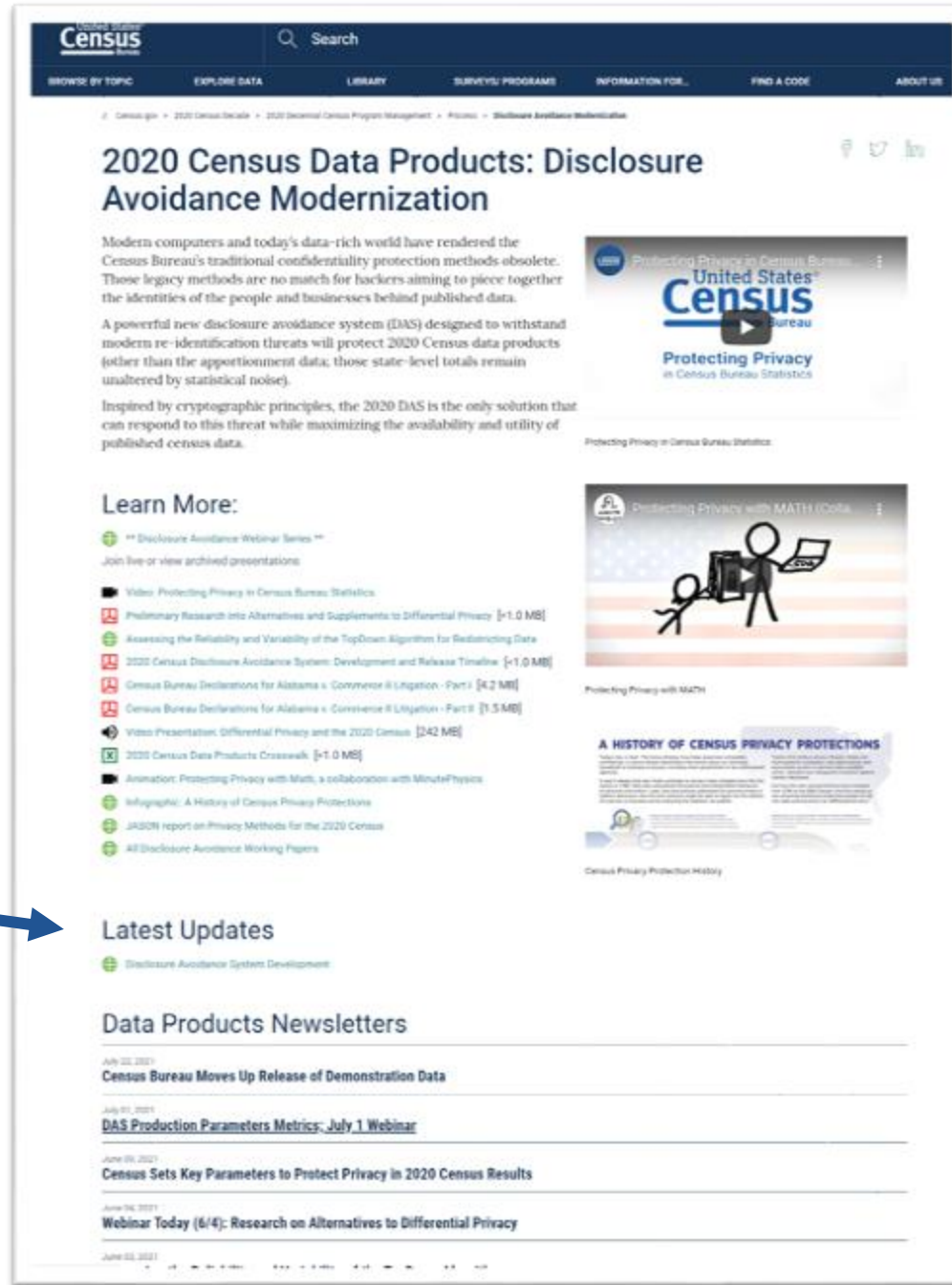
<https://www.census.gov/newsroom/blogs/director/2021/07/redistricting-data.html>

Stay Informed: Visit Our Website

*Search “Disclosure Avoidance” at
www.census.gov.

Latest Updates

 [Disclosure Avoidance System Development](#)



The screenshot shows the United States Census Bureau website. The main article is titled "2020 Census Data Products: Disclosure Avoidance Modernization". The article text discusses the modernization of the disclosure avoidance system (DAS) to protect 2020 Census data products from re-identification threats. It mentions that the new DAS is inspired by cryptographic principles and is the only solution that can respond to this threat while maximizing the availability and utility of published census data.

Below the article, there is a "Learn More:" section with a list of resources:

- ** Disclosure Avoidance Webinar Series **
Join live or view archived presentations:
- Video: Protecting Privacy in Census Bureau Statistics
- Preliminary Research into Alternatives and Supplements to Differential Privacy [~1.0 MB]
- Assessing the Reliability and Variability of the TopDown Algorithm for Redacting Data
- 2020 Census Disclosure Avoidance System: Development and Release Timeline [~1.0 MB]
- Census Bureau Declarations for Alabama v. Commerce II Litigation - Part I [4.2 MB]
- Census Bureau Declarations for Alabama v. Commerce II Litigation - Part II [1.5 MB]
- Video Presentation: Differential Privacy and the 2020 Census [242 MB]
- 2020 Census Data Products Crosswalk [~1.0 MB]
- Animation: Protecting Privacy with Math, a collaboration with MinutePhysics
- Infographic: A History of Census Privacy Protections
- JASON report on Privacy Methods for the 2020 Census
- All Disclosure Avoidance Working Papers

On the right side of the page, there are three featured images:

- "Protecting Privacy in Census Bureau Statistics" (Video thumbnail)
- "Protecting Privacy with MATH (Code)" (Image thumbnail)
- "A HISTORY OF CENSUS PRIVACY PROTECTIONS" (Infographic thumbnail)

Below the "Learn More:" section, there is a "Latest Updates" section with a list of updates:

- Disclosure Avoidance System Development

Below the "Latest Updates" section, there is a "Data Products Newsletters" section with a list of newsletters:

- July 22, 2021
Census Bureau Moves Up Release of Demonstration Data
- July 21, 2021
DAS Production Parameters Metrics: July 1 Webinar
- June 29, 2021
Census Sets Key Parameters to Protect Privacy in 2020 Census Results
- June 24, 2021
Webinar Today (6/4): Research on Alternatives to Differential Privacy
- June 23, 2021


Improvements to the 2020 Census Race and Hispanic Origin Question Designs, Data Processing, and Coding Procedures

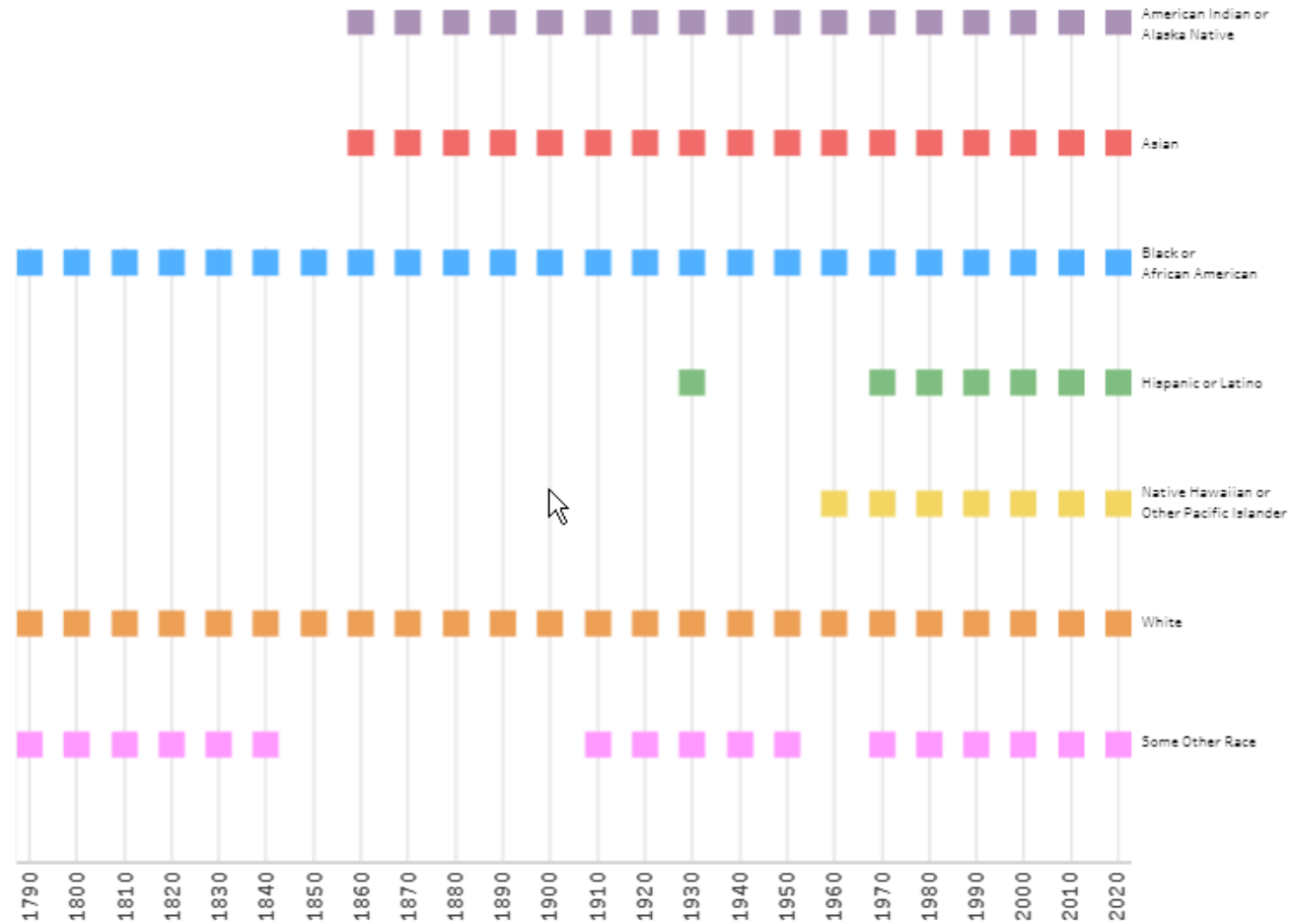
August 5, 2021

Rachel Marks

Chief, Racial Statistics Branch Population Division

U.S. Decennial Census Measurement of Race and Ethnicity Across the Decades: 1790–2020

Mapped to U.S. Office of Management and Budget's 1997 Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity 



U.S. Office of Management and Budget (OMB) Standards for Race and Ethnicity (1997)

OMB ethnicity categories:

- Hispanic or Latino
- Not Hispanic or Latino

OMB race categories:

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White

The Census Bureau is required by Congress to use the category “Some Other Race” as a sixth race category.

U.S. Office of Management and Budget (OMB) Standards for Race and Ethnicity (1997)

OMB minimum categories for data on race and ethnicity for federal statistics, program administrative reporting, and civil rights compliance reporting are defined as follows:

American Indian or Alaska Native — A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment.

Asian — A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.

Black or African American — A person having origins in any of the black racial groups of Africa.

Hispanic or Latino — A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.

Native Hawaiian or Other Pacific Islander — A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

White — A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

2020 Census

Separate Ethnicity Question

→ NOTE: Please answer BOTH Question 6 about Hispanic origin and Question 7 about race. For this census, Hispanic origins are not races.

6. Is this person of Hispanic, Latino, or Spanish origin?

- ☐ No, not of Hispanic, Latino, or Spanish origin
- ☐ Yes, Mexican, Mexican Am., Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, another Hispanic, Latino, or Spanish origin – *Print, for example, Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc.*

- Question designs for 2020 Census adhere to 1997 OMB standards for race and ethnicity.
- The Census Bureau did not use combined question format for collecting race and ethnicity.
- 1997 OMB standards require two separate questions for self-response.
- “Middle Eastern or North African” (MENA) category not used, but detailed MENA responses collected.
- Significant changes from 2010 Census questions for race and ethnicity.

Separate Race Question

7. What is this person's race?

Mark ☒ one or more boxes **AND** print origins.

- ☐ White – *Print, for example, German, Irish, English, Italian, Lebanese, Egyptian, etc.*

- ☐ Black or African Am. – *Print, for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc.*

- ☐ American Indian or Alaska Native – *Print name of enrolled or principal tribe(s), for example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.*

- | | | |
|--|-------------------------------------|---|
| <input type="checkbox"/> Chinese | <input type="checkbox"/> Vietnamese | <input type="checkbox"/> Native Hawaiian |
| <input type="checkbox"/> Filipino | <input type="checkbox"/> Korean | <input type="checkbox"/> Samoan |
| <input type="checkbox"/> Asian Indian | <input type="checkbox"/> Japanese | <input type="checkbox"/> Chamorro |
| <input type="checkbox"/> Other Asian –
<i>Print, for example, Pakistani, Cambodian, Hmong, etc.</i> | | <input type="checkbox"/> Other Pacific Islander –
<i>Print, for example, Tongan, Fijian, Marshallese, etc.</i> |

- ☐ Some other race – *Print race or origin.*

Improvements to the 2020 Census Hispanic Origin Question

- The instruction to “Print origin, for example” was revised to “Print, for example.”
- The example groups were revised from “Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.” to “Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc.”

→ **NOTE:** Please answer **BOTH** Question 6 about Hispanic origin and Question 7 about race. For this census, Hispanic origins are not races.

6. Is this person of Hispanic, Latino, or Spanish origin?

- ☐ No, not of Hispanic, Latino, or Spanish origin
- ☐ Yes, Mexican, Mexican Am., Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, another Hispanic, Latino, or Spanish origin – *Print, for example, Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc.* ↗

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Improvements to the 2020 Census Race Question

- Write-in response areas were added for the White and Black or African American racial categories.
- Six examples were provided for each of the write-in fields allocated to the "White," "Black or African American," and "American Indian or Alaska Native" groups.
- The category "Black, African Am., or Negro" was changed to "Black or African Am." on paper.
- The detailed Asian and Native Hawaiian or Other Pacific Islander checkboxes were re-ordered by population size.
- The checkbox category "Guamanian or Chamorro" was changed to "Chamorro."
- The write-in instructions for the "Some Other Race" category were updated to "Print race or origin."

7. What is this person's race?

Mark ☒ one or more boxes **AND** print origins.

☐ White – Print, for example, German, Irish, English, Italian, Lebanese, Egyptian, etc. ↴

☐ Black or African Am. – Print, for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc. ↴

☐ American Indian or Alaska Native – Print name of enrolled or principal tribe(s), for example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc. ↴

<input type="checkbox"/> Chinese	<input type="checkbox"/> Vietnamese	<input type="checkbox"/> Native Hawaiian
<input type="checkbox"/> Filipino	<input type="checkbox"/> Korean	<input type="checkbox"/> Samoan
<input type="checkbox"/> Asian Indian	<input type="checkbox"/> Japanese	<input type="checkbox"/> Chamorro
<input type="checkbox"/> Other Asian – Print, for example, Pakistani, Cambodian, Hmong, etc. ↴	<input type="checkbox"/> Other Pacific Islander – Print, for example, Tongan, Fijian, Marshallese, etc. ↴	

☐ Some other race – Print race or origin. ↴

How Data on Hispanic Origin and Race are Processed and Coded in the 2020 Census Compared to the 2010 Census

2010 Census

- Limited to coding two write-in responses and 30 characters per write in line.
- Due to the limit, in the Hispanic origin question, Hispanic origin responses were prioritized over race responses.
- Due to the limit, in the race question, race and tribal responses were prioritized over Hispanic origin responses.

2020 Census

- Up to six write-in responses and 200 characters were coded per write in line.
- There was no prioritization of responses, all responses were treated equally.

2010 Census Data Collection Operation Captured Up to 30 Characters and Coded Up to Two Groups

MEXICAN AMERICAN INDIAN AND PORTUGUESE AND AFRICAN
AMERICAN

2020 Census Data Collection Operation Captured Up to 200 Characters and Coded Up to Six Groups

MEXICAN AMERICAN INDIAN AND PORTUGUESE AND AFRICAN
AMERICAN

Improvements for 2020 Census Hispanic Origin and Race Code List

2010 Census

- Used two separate code lists for race and Hispanic origin.
- Race code list included limited detailed codes for White, Black, and Hispanic groups.
- Hispanic origin code list included limited detailed codes for race groups.

2020 Census

- Used one combined code list for race and Hispanic origin.
- The combined race and Hispanic origin code list included thousands of detailed codes for all race and Hispanic origin groups.

Coding Rules for Hispanic Origin: 2010 Census and 2020 Census

- In the 2010 Census, if someone provided more than two write-in responses in the Hispanic origin question write-in area, we prioritized coding Hispanic groups over race groups or other types of responses.
- In 2020, there was no prioritization of responses, enabling all responses to be treated equally.

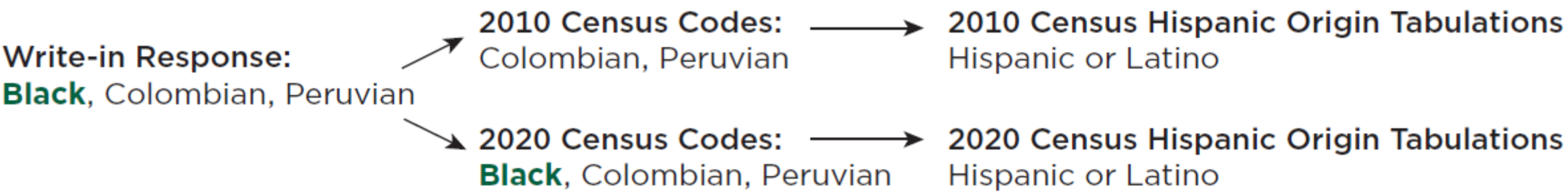
Coding Rules for Hispanic Origin Question: 2010 Census and 2020 Census

Write-in response	How it was coded in the 2010 Census	How it was coded in the 2020 Census
Black, Peruvian	Black <i>and</i> Peruvian	Black <i>and</i> Peruvian
White, Puerto Rican	White <i>and</i> Puerto Rican	White <i>and</i> Puerto Rican
Spaniard, White, Honduran	Spaniard <i>and</i> Honduran	Spaniard <i>and</i> White <i>and</i> Honduran
Mexican, Black, Colombian	Mexican <i>and</i> Colombian	Mexican <i>and</i> Black <i>and</i> Colombian

Note: 2010 Census coding rules prioritized Hispanic origin responses over race responses; 2020 Census coding rules did not.

Hispanic Origin Coding and Tabulation: 2010 Census and 2020 Census

Coding Impacts on Tabulation in the Hispanic Origin Question



Coding Rules for Race: 2010 Census and 2020 Census

- In 2010, if more than two groups were part of a write-in text string on the same line in the race question, we prioritized coding race groups over Hispanic origin groups because we were limited to only coding two responses.
- In 2020, there was no prioritization of responses, enabling all responses to be treated equally.

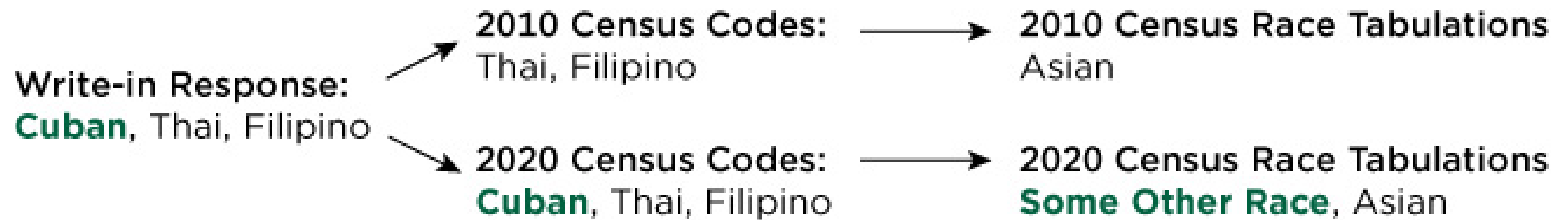
Coding Rules for Race Question: 2010 Census and 2020 Census

Write-in response	How it was coded in the 2010 Census	How it was coded in the 2020 Census
Hispanic, White	Hispanic <i>and</i> White	Hispanic <i>and</i> White
Black, Latino	Black <i>and</i> Latino	Black <i>and</i> Latino
Hispanic, White, Chinese	White <i>and</i> Chinese	Hispanic <i>and</i> White <i>and</i> Chinese
Spanish, Mexican, Samoan, Chamorro	Samoan <i>and</i> Chamorro	Spanish <i>and</i> Mexican <i>and</i> Samoan <i>and</i> Chamorro

Note: 2010 Census coding rules prioritized race responses over Hispanic origin responses; 2020 Census coding rules did not.

Race Coding and Tabulation: 2010 Census and 2020 Census

Coding Impacts on Tabulation in the Race Question



Impact of Questionnaire and Coding Improvements on Hispanic Origin and Race Data

- Improving the 2020 Census questions on Hispanic origin and race, along with our coding procedures, enable us to have a more complete picture of the detailed identities reported by the U.S. population in 2020.
- We expect that the Hispanic origin and race statistics in the upcoming 2020 Census Redistricting Data Summary File will not only reflect demographic changes but also improvements in how we asked the questions and captured and coded the responses.
- These improvements more accurately illustrate the richness and complexity of how people identify their race and ethnicity in the 21st century.

Measuring Racial and Ethnic Diversity in the 2020 Census

August 5, 2021

Eric Jensen

Senior Technical Expert for Demographic Analysis, Population Division

Categorizing Race and Ethnicity

The standards on race and ethnicity were set by the U.S. Office of Management and Budget (OMB) in 1997.

The Census Bureau's diversity calculations require that we use mutually exclusive racial and ethnic (nonoverlapping) categories.

White alone, not Hispanic or Latino	Black or African American alone, not Hispanic or Latino	American Indian and Alaska Native alone, not Hispanic or Latino	Asian alone, not Hispanic or Latino
Native Hawaiian and Other Pacific Islander alone, not Hispanic or Latino	Some Other Race alone, not Hispanic or Latino	Two or More Races, not Hispanic or Latino	Hispanic or Latino

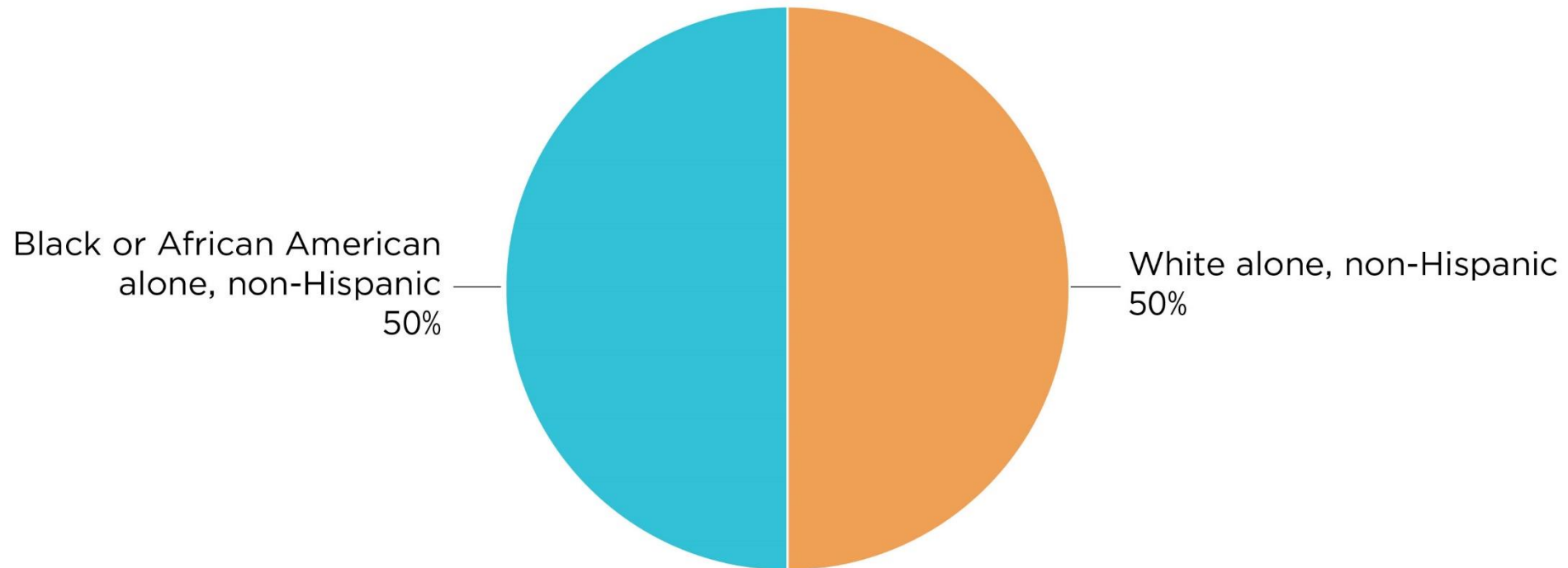
What is Diversity?

- The concept of “*diversity*” refers to the representation and relative size of different racial and ethnic groups within a population. It is maximized when all groups are represented in an area and have equal shares of the population.
- We use several approaches to measure racial and ethnic diversity in the 2020 Census results:
 - Diversity Index
 - Prevalence Rankings and Diffusion Score
 - Prevalence Maps

Diversity Index (DI)

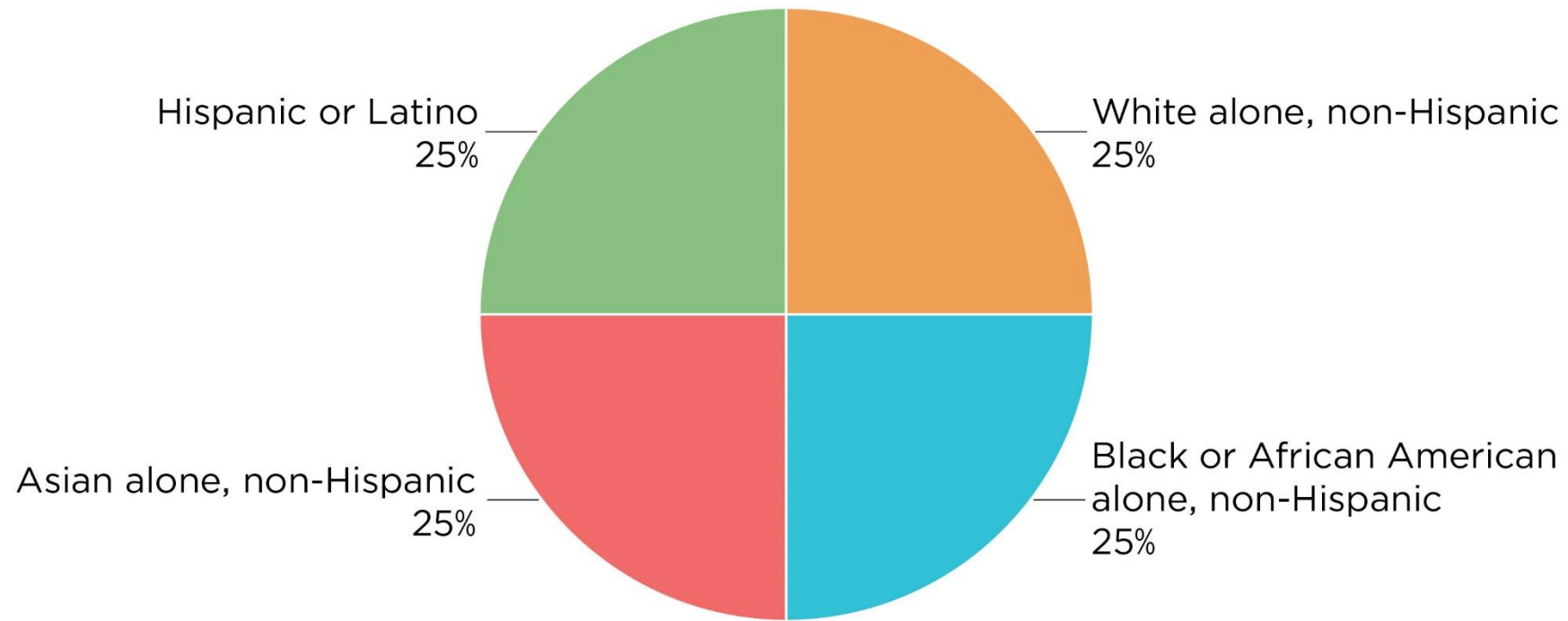
- The DI shows the probability that two people chosen at random will be from different race and ethnic groups.
- We converted the probabilities into percentages to make them easier to interpret.
 - Percent chance that two people chosen at random will be from different racial and ethnic groups.
- The DI can be used to measure diversity at various levels of geography such as the nation, state or county.

Two Large and Equally Sized Groups: Diversity Index = 50%



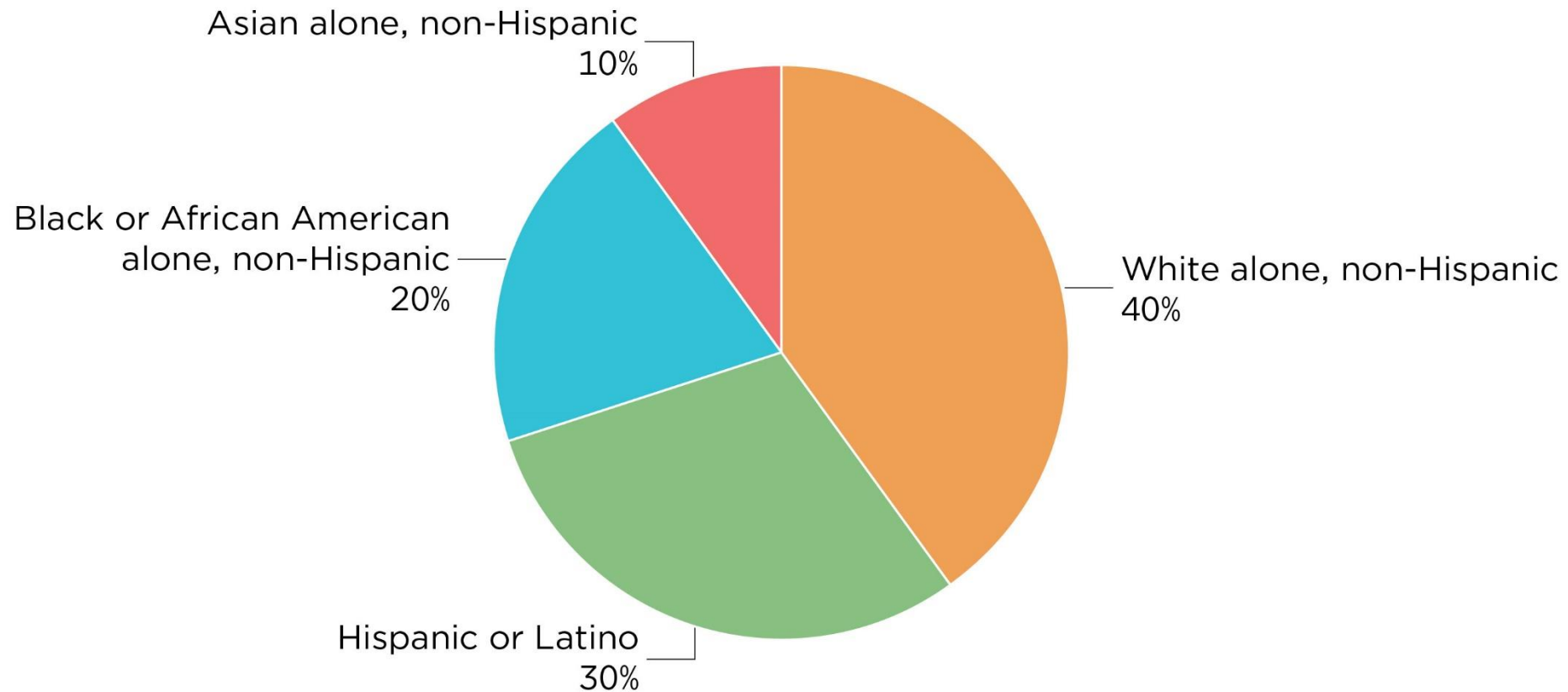
Note: Hypothetical data to illustrate the properties of the Diversity Index.

Four Equally Sized Groups: Diversity Index = 75%



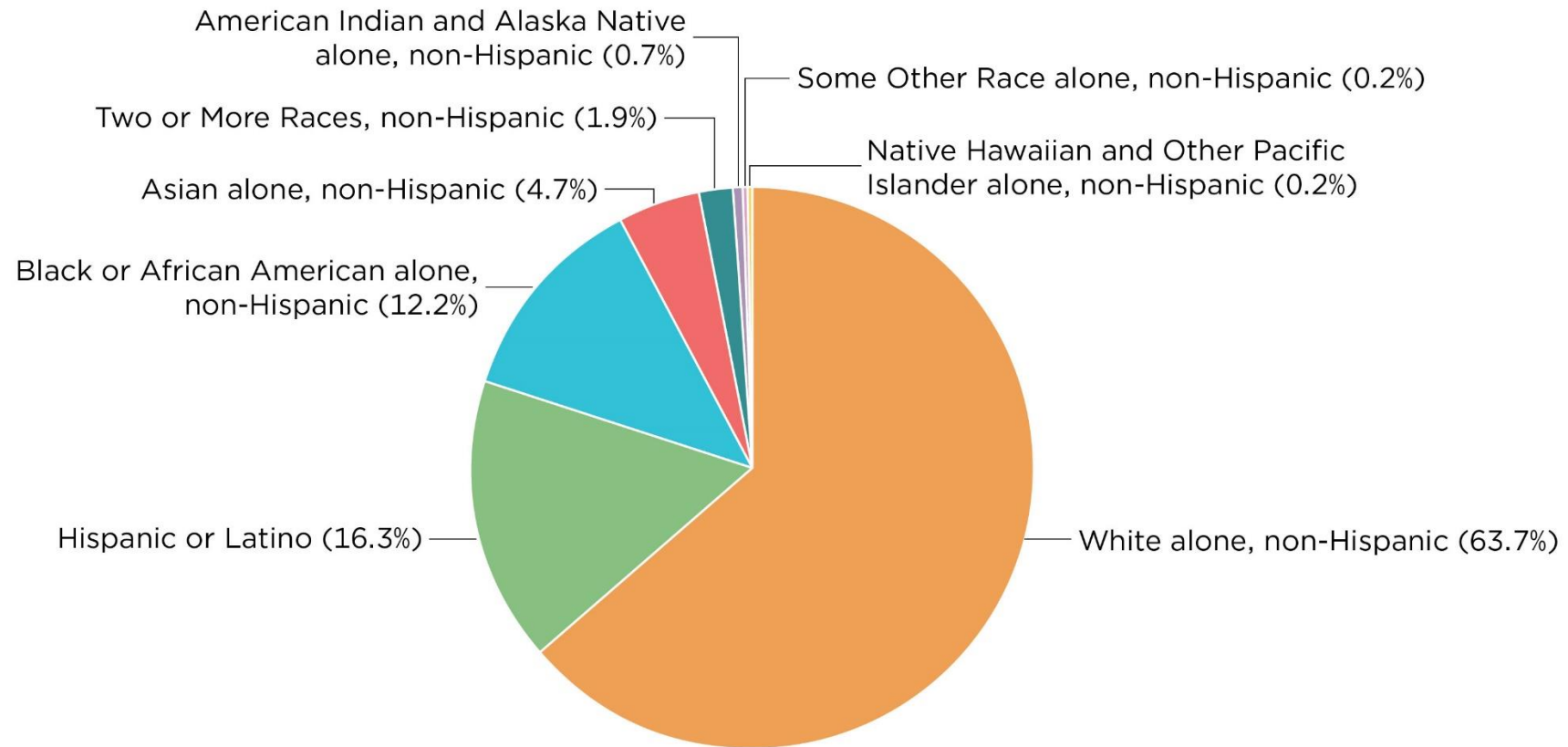
Note: Hypothetical data to illustrate the properties of the Diversity Index.

Four Unequally Sized Groups: Diversity Index = 70%



Note: Hypothetical data to illustrate the properties of the Diversity Index.

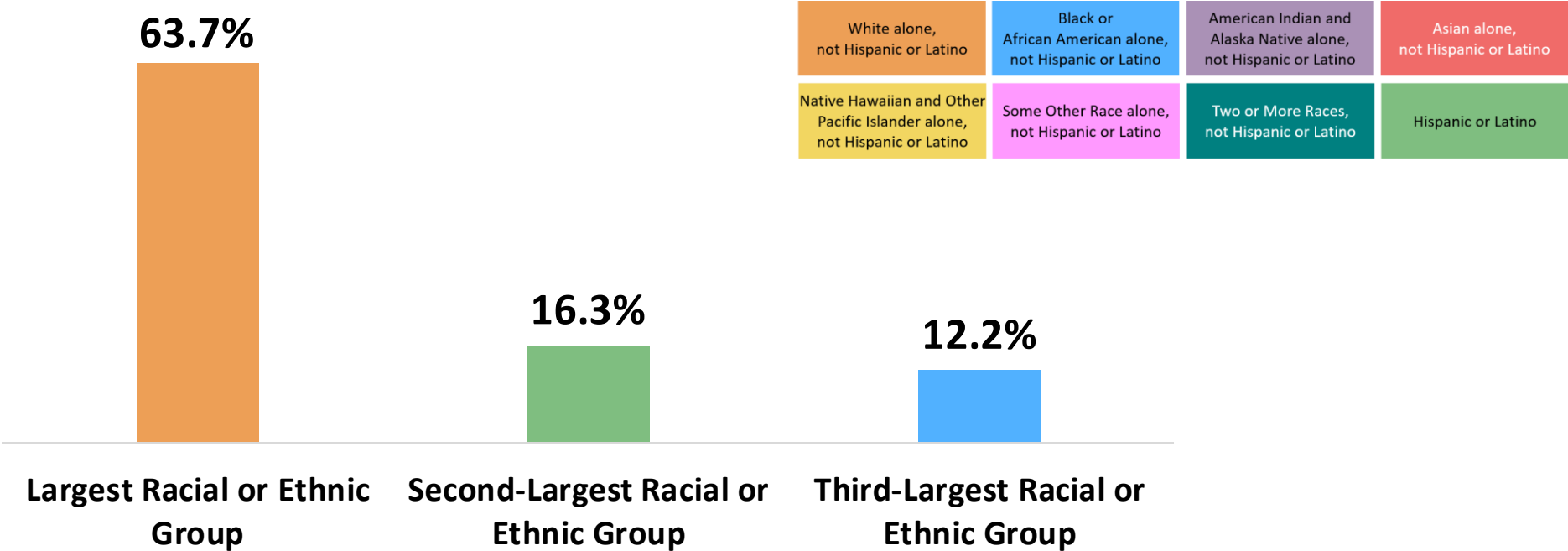
U.S. Population in 2010: Diversity Index = 54.9%



Source: U.S. Census Bureau, 2010 Census Redistricting Data (Public Law 94-171) Summary File.

Prevalence Ranking: 2010

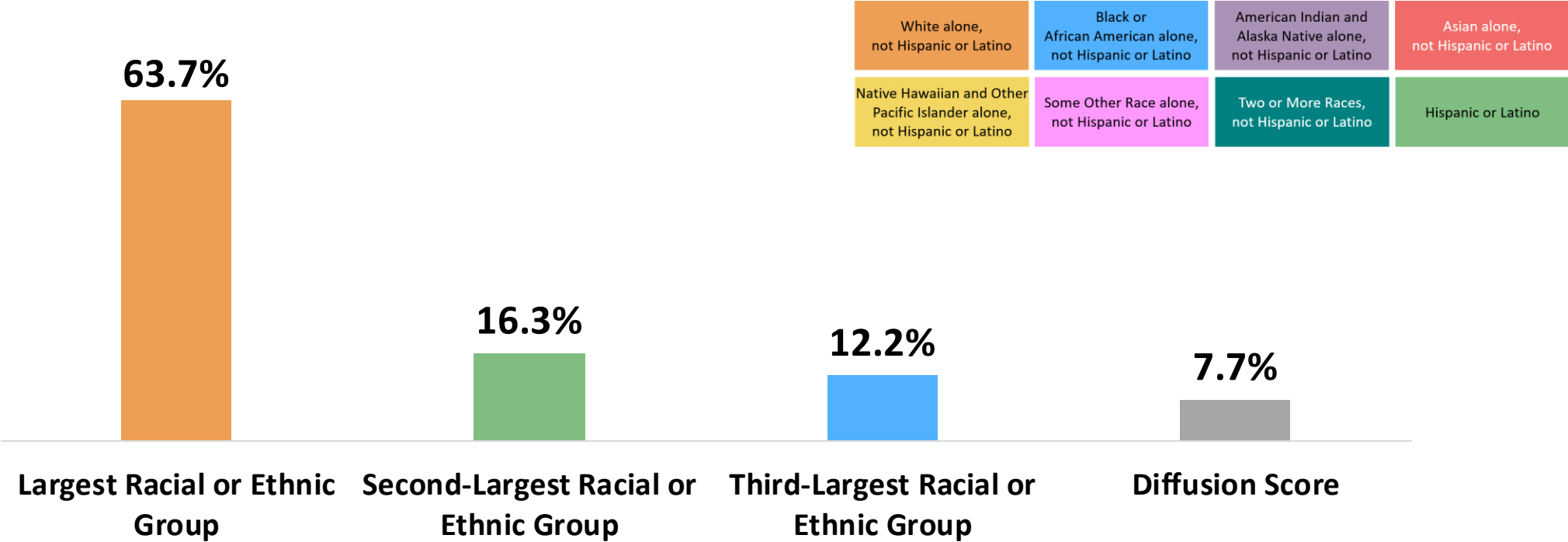
Prevalence rankings focus on patterns in the largest-, second-, and third-largest racial and ethnic groups.



Source: U.S. Census Bureau, 2010 Census Redistricting Data (Public Law 94-171) Summary File.

Diffusion Score: 2010

The diffusion score measures the percentage of the population that is not in the first-, second- or third-largest racial and ethnic groups combined.

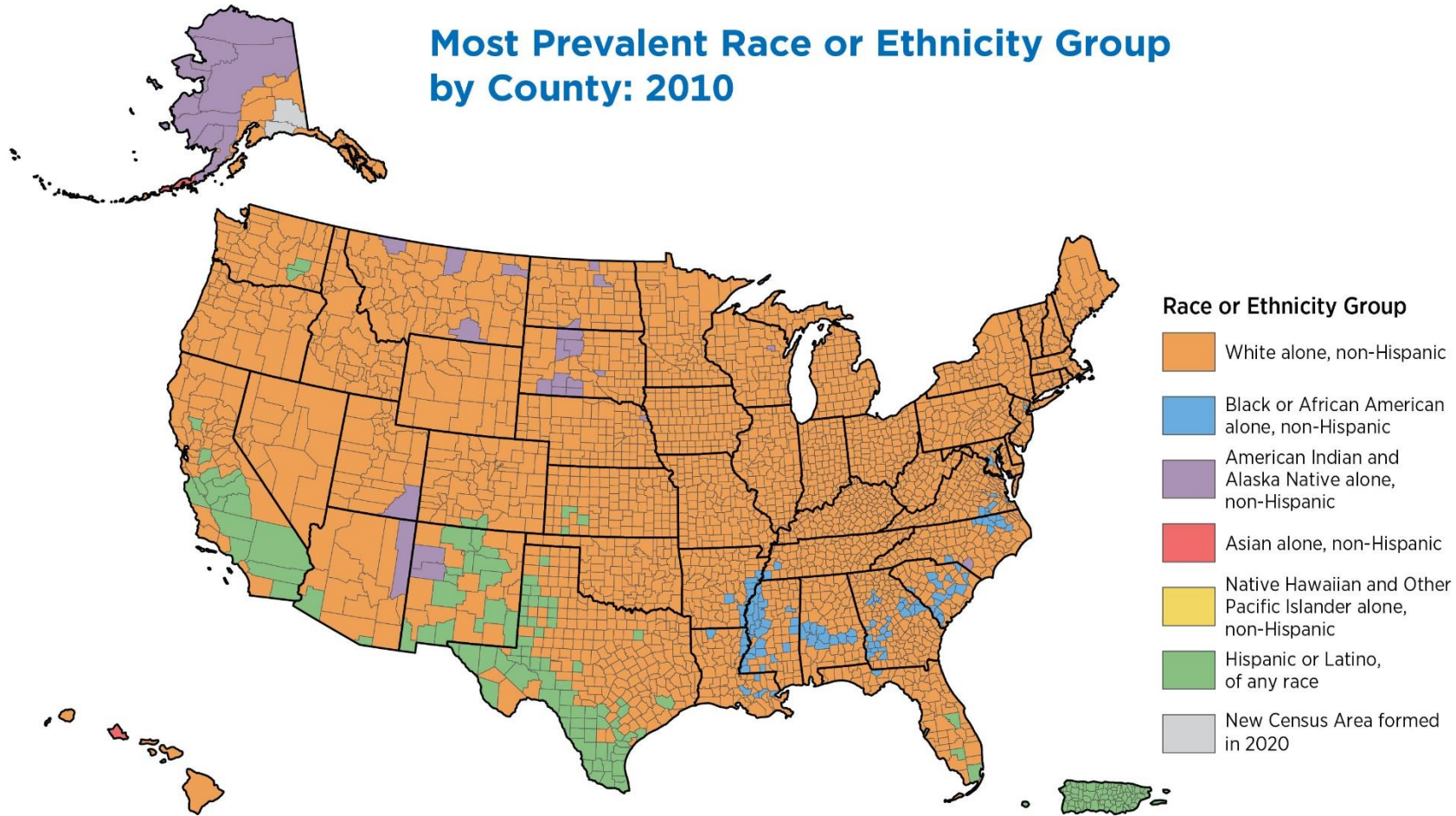


Source: U.S. Census Bureau, 2010 Census Redistricting Data (Public Law 94-171) Summary File.

Prevalence Maps

- Prevalence maps show the geographic distribution of the largest or second-largest racial or ethnic groups for all counties in the United States.
- It is similar to the prevalence ranking approach shown earlier.
- This approach helps us identify regional patterns and clusters of counties where certain racial and ethnic groups are more prevalent.

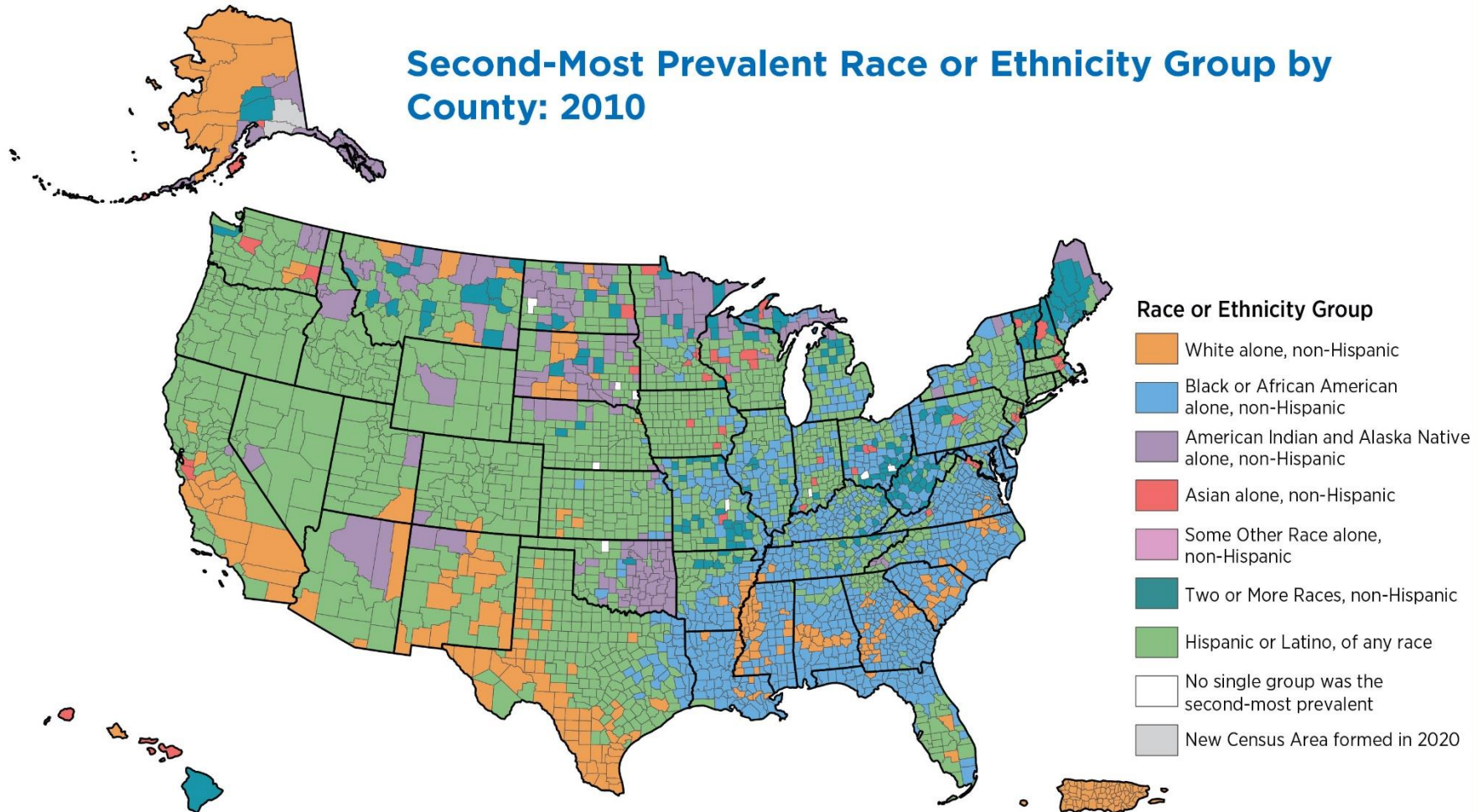
Most Prevalent Race or Ethnicity Group by County: 2010



Note: Some Other Race alone, non-Hispanic and Two or More Races, non-Hispanic were not the most prevalent group in any county. Native Hawaiian and Other Pacific Islander, non-Hispanic was the most common group in Kalawao County, HI.

Source: U.S. Census Bureau, 2010 Census Redistricting Data (Public Law 94-171) Summary File.

Second-Most Prevalent Race or Ethnicity Group by County: 2010



Note: Native Hawaiian and Other Pacific Islander alone, non-Hispanic was not the second-most prevalent group in any county. Some Other Race alone, non-Hispanic was the second-most common group in Dukes County, MA.

Source: U.S. Census Bureau, 2010 Census Redistricting Data (Public Law 94-171) Summary File.

Measuring Diversity Then and Now

- In the past, the Census Bureau had sometimes used the concept of “*majority*” and “*minority*” for measuring diversity.
- This approach has several limitations:
 - How the majority and minority race and ethnic groups are defined is ambiguous.
 - People may not identify with certain population groups even if that is how they are classified and tabulated per federal standards.
- We chose this new set of diversity measures because they have clear conceptual definitions and interpretations.
- We plan to explore other diversity measures as part of our future research with 2020 Census data.

Upcoming Release

- Later this month, we will be releasing the first results of the 2020 Census by race and Hispanic origin.
- First chance to look at racial and ethnic diversity in the 2020 Census:
 - Random Samplings blog on Measuring Racial and Ethnic Diversity for the 2020 Census.
 - America Counts story on Racial and Ethnic Diversity in the United States: 2010 Census and 2020 Census.
 - Data visualization.

Questions?

Dial *1 for the Operator



2020 Census Redistricting Data

- The 2020 Census Redistricting Data Products:
 - News conference to announce results.
 - America Counts stories that provide analysis.
 - One national news release with data highlights.
 - 2020 Census Data map.
 - Data visualizations: Race and Ethnicity, Housing and Population Change, Voting Age Population.
 - 2020 Census Demographic Data Map Application.
- [2020 Census Redistricting Data Press Kit](#)

Upcoming Data Visualizations

Race and Ethnicity in the United States: 2010 Census and 2020 Census

Pick a topic. → **Race by Ethnicity** **Hispanic Origin**

Select a question:

What percentage was each group in 2020? **How has each group changed since 2010?** **What are facts for my state or county?**

To view specific groups: (1) Use the first drop-down filter to select a race group, (2) Use the second drop-down filter to select Total Population, Hispanic or Latino, or Not Hispanic or Latino, and (3) Hover over the map to view statistics for each state. The list on the left shows states (or state equivalents) ranked by the percentage for the selected group out of the total population, Hispanic or Latino population, or not Hispanic or Latino population. Use the filter on the right of the map to view county-level statistics for your state.

Racial and Ethnic Diversity in the United States: 2010 Census and 2020 Census

Pick a topic. → **Diversity Index Maps** **Race and Ethnicity Prevalence Rankings** **Race and Ethnicity Prevalence Maps** **Data Tables**

We use the **Diversity Index (DI)** to measure the probability that two people chosen at random will be from different race and ethnicity groups. The DI is bounded between 0 and 1. A 0-value indicates that everyone in the population has the same racial and ethnic characteristics. A value close to 1 indicates that everyone in the population has different racial and ethnic characteristics. We have converted the probabilities into percentages to make them easier to interpret. In this format, the DI tells us the chance that two people chosen at random will be from different racial and ethnic groups—a 61.1% chance in the United States in 2020.

Hover over the map to view the DI for each state. The list on the left shows states (or state equivalents) ranked by DI. Use the filters to the right of the map to change the year or view county-level statistics for your state.

The U.S. Adult and Under-the-Age-of-18 Populations: 2020 Census

Select a question:

What percentage of the population was aged 18 and over in 2020? **How has the population aged 18 and over changed since 2010?** **What are facts for my state or county?**

Hover over the map to view statistics for each state. The list on the left shows states (or state equivalents) ranked by percent aged 18 and over. Use the filter on the right to view county-level statistics for your state.

Upcoming Data Visualizations

Race and Ethnicity in the United States: 2010 Census and 2020 Census

Pick a topic. → Race by Ethnicity Hispanic Origin

Select a question:

What percentage was each group in 2020? How has each group changed since 2010? What are facts for my state or county?

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Upcoming Data Visualizations

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Select a question:

What percentage of the population was aged 18 and over in 2020? How has the population aged 18 and over changed since 2010? What are facts for my state or county?

Hover over the map to view statistics for each state. The list on the left shows states (or state equivalents) ranked by percent aged 18 and over. Use the filter on the right to view county-level statistics for your state.

Data Visualization: Housing and Population Change

6 topics, all broken out by state, county and core based statistical areas (with further delineation by metro or micropolitan area).

Population Topics

- 2020 total population.
- Numeric population change (2010-2020).
- Percent population change.

Housing Topics

- 2020 housing unit total.
- Percent housing unit change (2010-2020).
- 2020 vacancy rate.

Redistricting Data Program

QuickFacts Application

QuickFacts App

- 2020 P.L. data will be published to QuickFacts with or soon after the Legacy Format Summary Files release.
- Data includes 2020 total pop counts for eight geographies: nation, states, Puerto Rico, counties, municipios, places (5k+), zonas urbanas, and minor civil divisions (5k+).
- Data users can compare data for up to six geographic entities at a time.

Table

Population

Sparta township, Kent County, Michigan

Albert Lea city, Minnesota

Oklahoma City city, Oklahoma

Harris County, Texas

North Carolina

United States

PEOPLE						
Population						
Population estimates, July 1, 2019, (V2019)	9,703	17,656	655,057	4,713,325	10,488,084	328,239,523
Population estimates base, April 1, 2010, (V2019)	9,111	18,203	580,462	4,093,176	9,535,751	308,758,105
Population, percent change - April 1, 2010 (estimates base) to July 1, 2019, (V2019)	6.5%	-3.0%	12.9%	15.2%	10.0%	6.3%
Population, Census, April 1, 2010	9,110	18,016	579,999	4,092,459	9,535,483	308,745,538
Population, Census, April 1, 2020	X	X	X	X	10,439,388	331,449,281

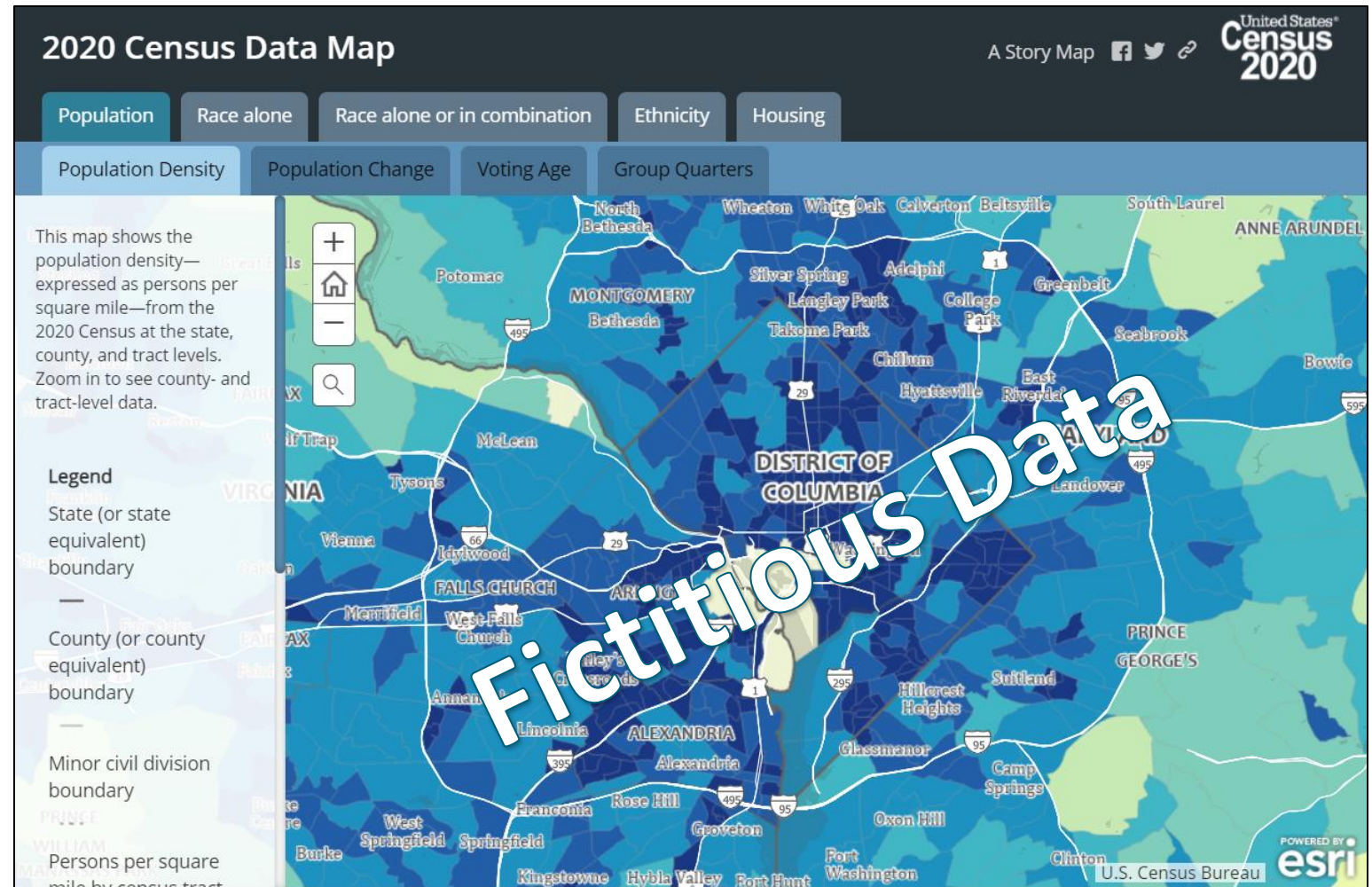
[About datasets used in this table](#)

Redistricting Data Program

2020 Census Demographic Data Map Application

2020 Census Demographic Data Map App

- 2020 Mapping App will be published with or soon after the Legacy Format Summary Files release.
- App will feature 2020 P.L. population, race/ethnicity and housing data for states, counties, and tracts.
- The geographies are scale dependent (disaggregate geographies populate as the user zooms in).



Questions?

Dial *1 for the Operator



For Further Information

Media:

Public Information Office

pio@census.gov

301-763-3030/877-861-2010 (U.S. and Canada only)

General Public:

Customer Service Center

1-800-923-8282 or

301-763-INFO (4636)

Press Kit:

Go to U.S. Census Bureau at

Census.gov → Newsroom → Press Kits